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AUTHOR	Hemmeter, Mary Louise; Townley, Kim; Wilson, Stephen; Epstein, Ann; Hines, Huyi
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ABSTRACT

This document is comprised of four reports related to the evaluation of the Kentucky Preschool Program (KPP), serving 4-year-olds who qualify for the free lunch program and 3- and 4-year-olds with disabilities. Report 1 focuses on the differential effects of the preschool program related to race and to gender. Three key findings are reported: (1) children identified as at-risk or with disabilities made significant developmental progress as a result of participating in the program; (2) participating children continued to maintain gains through primary school; and (3) more similarities than differences were found across race and gender. Report 2 provides information on program characteristics and child outcomes, based on a study of five classrooms examined in depth during the 1997-1998 school year. Findings indicated that program characteristics associated with positive child outcomes related to collaboration, and open communication and curriculum. Report 3 presents the findings of three studies examining the longitudinal effects of the preschool program on children from primary school through middle school. Taken in combination, the longitudinal data suggest that the progress children made during preschool depended on their status when they entered preschool. Their preschool experience provided a foundation that supported them as they moved through the primary grades. Through the beginning of middle school, preschool participants continued to do as well as or better than peers who were not eligible for the programs when they were preschoolers. Report 4 presents the cumulative findings for 3,528 students who participated in KPP. Findings indicate that the KPP had a positive effect on children's development during preschool, their readiness for kindergarten, and their social and academic progress through the fifth grade. (KB)

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Kentucky Preschool Evaluation Project: Differential Effects, Program Characteristics and Child Outcomes, and Longitudinal and Cumulative Findings. Reports 1-4, 1998-1999.

Mary Louise Hemmeter
Kim Townley
Stephen Wilson
Ann Epstein
Huyi Hines

University of Kentucky
Kentucky Preschool Evaluation Project

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Differential Effects of the Kentucky Preschool Program

Introduction

"What is most noteworthy is that the Kentucky Preschool Program produces similar positive outcomes for all groups of children regardless of their race or gender."

The Kentucky Preschool Program (KPP) serves 4-year-old children who qualify for the free lunch program, and 3- and 4-year old children with disabilities. An evaluation of the KPP has been on going for seven years[1]. As part of the evaluation of the KPP, children have been tested at the beginning of their year in preschool (pretest) and at the end of their year in preschool (posttest) to determine how much progress they made in preschool. In addition, they have been followed into primary school. Several outcomes have been monitored to determine children's success in preschool and progress after preschool including: a) developmental progress (preschool), b) social skills (preschool and primary), c) early literacy (preschool), and d) language (Kindergarten). In addition to analyzing these data for the total group of children each year, the data have been analyzed to determine if the amount of progress children made in preschool and their progress as they moved into the primary grades was related to their race or gender.

Children make significant progress in their overall development, social skills, and early literacy during the year they are in the Kentucky Preschool Program. The gains that participants make during their preschool experience persist so that preschool program participants do as well as their classmates from higher income families throughout their primary school career.

Overall, the Kentucky Preschool Program is effective for male and female children and for black and white children with only minor differences. What is most noteworthy is that the Kentucky Preschool Program produces similar positive outcomes for all groups of children regardless of their race or gender.

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[1]*For further information, contact Mary Louise Hemmeter at (606) 257-7905 or MLHEMM@pop.uky.edu.*

Race

In order to study differences related to children's race, a sample of 171 black and 670 white children was included in the analysis. Some of the major findings are summarized below. These findings are reported in three areas: a) general developmental progress (e.g., motor, cognitive); b) early literacy skills; and c) social skills.

General Developmental Progress

At the beginning of preschool, there were some developmental differences between black and white children:

- In both the at-risk and disabilities groups, black children had better gross motor skills than white children;
- White at-risk children had better eye-hand coordination as well as better communication and cognitive skills than black children.

Generally, black and white children made similar progress during their year in preschool. This was true across all areas (e.g., motor skills, cognitive skills, and communication skills) for black and white children who are at-risk. While black and white children with disabilities made similar progress in most areas, black children with disabilities made significantly more progress in personal-social skills than did white children.

Early Literacy Skills

Analyses of children's early literacy skills were conducted. These skills included letter recognition, writing letters, and book handling skills. While both black and white children made significant progress in this area, there were some differences:

- At the beginning of their preschool year, white children in the at-risk group had significantly better book handling skills than did black children. Book handling skills include such things as knowing the front and back of the book, knowing where the title of the book is, and knowing how to turn the pages. No other differences were found between the groups of at-risk children and no differences were found between white children and black children with disabilities;
- Black and white children made similar progress on book handling skills from the beginning of their preschool year to the end of the year. However, black children in both the at-risk and disabilities groups learned to recognize significantly more letters than did white children in either group.

Social Skills

Teachers were asked to rate children's social skills and problem behaviors at the beginning and end of the preschool year in order to evaluate the impact of participation in the Kentucky Preschool Program on children's development in these areas. The findings are consistent with the findings reported above.

- On measures of both social skills and problem behaviors, there were no differences between groups as they entered preschool.
- Regardless of their race, children made significant progress in their social skills while they were in preschool.
- The only difference between groups is that white children had fewer problem behaviors at the end of preschool than did black children.

Language Skills

One of the findings during previous years of this project is that children do not make as much progress in language skills while they are in preschool as they do in other areas such as cognitive skills or motor skills. In order to determine if their language skills were age-appropriate as they transitioned into kindergarten, children's language was tested at the beginning of kindergarten. These analyses revealed the following:

- White children's expressive language skills were age-appropriate while black children were behind their age-level in expressive language skills. Expressive language skills include asking questions that begin with who or what, relating experiences, and using articles.
- Both black and white children were behind age-level in skills related to auditory comprehension. Auditory comprehension includes skills such as understanding spatial concepts and complex directions, and identifying pictures.

Gender

A sample of 460 males and 403 females was studied to determine if children's progress was related to their gender. These findings are presented below using the same measures as were described in the previous section.

General Developmental Progress

Both males and females made significant gains across developmental areas during their year in the Preschool Program. The two groups were similar in all areas except those reported below:

- At the beginning of preschool, females had better skills across developmental areas than did males;
- In the group of at-risk children, males made significantly more progress than females in large muscle development and cognitive development;
- In the disabilities group, females made significantly more progress than males in receptive communication.

Social Skills and Problem Behaviors

No differences were found between males and females on measures of social skills or problem behaviors.

Early Literacy Skills

Males and females made similar gains in book-handling skills. While children with disabilities made similar gains in letter recognition regardless of their gender, girls in the at-risk group learned to recognize more letters than did males.

Summary of Findings

The findings of the analyses related to race and gender indicate that generally, children made significant progress while they were in the Kentucky Preschool Program regardless of their race or gender. Overall, the data point to three key findings:

1 Kentucky's Preschool Program accomplishes its purpose: children who are at-risk and children with identified disabilities make significant developmental progress as a result of their participation in the Program.

2 Children who have participated in the program continue to maintain gains throughout their primary school career.

3 More similarities than differences are found across race and gender. Although there are a few areas where there are differences based on race and/or gender, overall development is consistently similar across all groups of children.

Recommendations

Based on the data reported above, in combination with other relevant data collected as part of this project, the following recommendations are provided:

- Teachers should be responsive to the developmental needs of all children regardless of their race and gender. Because there are subtle differences based on race and/or gender, it is critical that teachers evaluate their attitudes and practices related to race and/or gender. Previous program quality data have indicated that one of the most significant problem areas is the extent to which diversity is embedded throughout the curriculum. This is an area which should be emphasized in professional development activities;
- As indicated above, the data indicate that the program is generally effective for males and females, black children and white children, and children with and without disabilities. We need to continue to evaluate how specific child characteristics and program characteristics influence child outcomes. In addition, it is important to determine if there are additional children who are not currently eligible for the program but who could benefit from the program;
- In view of the program's positive results, we must work to ensure that all eligible children are being served if that is the choice of their parents;
- At the policy level, teacher and staff evaluation procedures should be established which address attitudes and actions regarding diversity. Support systems should be provided for teachers and staff who have weaknesses in this area.

University of Kentucky
Kentucky Preschool Evaluation Project
46 Dickey Hall
Lexington, KY 40506-0017
Phone: (606) 257-4331
1-(800) 257-9602
Fax: (606) 323-9799

The Kentucky Preschool Program: Program Characteristics and Child Outcomes

Special Points of Interest:

- Five preschool classrooms were studied in-depth. Observations focused on teacher-child interactions, child-child interactions, classroom practices, curriculum development and implementation, and staff interactions.
- At-risk children and children with disabilities both demonstrated more overall progress than would be expected.
- The degree of collaboration and communication among classroom teachers, teaching assistants and special educators affects teacher-child interactions and ultimately, the quality of day-to-day activities.

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Introduction

Five classrooms were studied in-depth during the 1997-1998 school year. These classrooms were selected to represent geographical areas of the state as well as rural, suburban, and urban settings. Classroom observations; interviews with teachers, teachers' aides, principals, special education teachers, district coordinators, and parent involvement specialists; and document reviews were conducted at each of the five sites. Developmental assessments were conducted with children in each site.

Program Description

Observations, interviews and document reviews were used to identify program characteristics that are associated with positive child outcomes. Observations focused on teacher-child interactions, child-child interactions, classroom practices, curriculum development and implementation, and staff interactions. Each classroom was observed at least eleven times. Observations ranged from three hours at the half-day sites to seven and a half hours at the full day sites. Interviews addressed classroom goals and practices, characteristics of children and families, and teacher/parent attitudes about the preschool experience.

Analyses revealed common components as well as differences across the programs. These characteristics are described in the following section under seven categories: curriculum, assessment, parent involvement and home visits, program context, staff roles and collaboration, links with other programs, and special education.

For more specific information on this study, please contact Dr. Beth Goldstein at (606) 257-2705, or bethg@pop.uky.edu.
We would like to thank Dr. Beth Goldstein, Dr. Mitzi Lowe, and Julie Schenck for their leadership on this study.

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Curriculum

- High Scope was used as the primary curriculum approach in four of the five sites.
- Kindergarten readiness was reported to be one of the major goals of the programs.
- The extent to which cultural diversity and awareness were embedded into the curriculum and the prominence of child-directed activities varied from site to site.
- The extent to which individualization occurred for all children varied from site to site.

Assessment

- Teachers shared student progress with parents via written reports, home visits, and parent-teacher reports.
- Various assessment approaches were used, including High Scope COR, Battelle Developmental Inventory, Social Skills Assessment, portfolios, developmental checklists, parent surveys, and daily anecdotal records.
- Teachers held discussions with kindergarten teachers to ensure a smooth transition from preschool to kindergarten. However, there was variability across programs in terms of the depth of these discussions.

Parent Involvement and Home Visits

- Across sites, home visits generally addressed school goals and children's progress with little attention given to understanding home situations or providing parents with strategies for supporting their children's development.
- Initial parent reluctance regarding home visits (e.g., intrusion, concern about having home life judged) was usually overcome when professionals exhibited positive attitudes toward families.
- Programs varied regarding the extent to which teamwork was used in carrying out home visits.
- Teachers' support for and understanding of the purposes of home visits varied from site to site.

Program Contexts

- Enrollment policies were not consistent from site to site.
- Communication was stronger in neighborhood programs than in more diffuse school populations.

Staff Roles and Collaboration

- The nature of collaboration and shared responsibility varied from site to site.
- Teachers' aides were involved in curriculum and assessment decisions at some sites but not at others.

Links with Other Programs

- Teachers were beginning to access services from programs such as Family Resource and Youth Services Centers. However, teachers requested clarification of role responsibilities when interventions (e.g., discipline) were needed.

Parent Involvement

- Although parents and teachers were willing to support one another, both were uncertain about what should be the nature and extent of parental involvement.
- Parents of children with disabilities expressed a desire for more frequent information (i.e., verbal and written) about their child's progress.

Special Education

- Collaboration, rather than the special educator's consistent presence in the classroom, emerged as a key factor contributing to the quality of special education services.
- Close collaboration between special educators and classroom teachers resulted in effective communication with parents.
- Parents of children with special needs preferred inclusive settings where their children had role models.

Standardized Test Results

A total of 92 children at the five preschool sites were administered a developmental assessment[1] in the fall and spring. At-risk children (N=54) and children with disabilities (N=31) both demonstrated more overall progress than would be expected based on their development at the beginning of preschool. These findings are consistent with findings from previous years[2].

- At-risk children demonstrated more progress than would be expected in receptive communication (e.g., understanding language), gross motor skills (e.g., hopping) and cognition (e.g., answering simple logic questions). Children who were at-risk demonstrated slightly less progress than would be expected in the areas of adaptive skills (e.g., attending to learning tasks in small group) and expressive communication (e.g., using past tense). Children with disabilities demonstrated more progress than would be expected in each area with the exception of receptive language. They also exhibited significant growth in gross motor skills.
- Children's pre-literacy skills were also assessed. At-risk children made significant gains in recognizing and writing upper case letters and in recognizing and writing their names. Children with disabilities did not make significant literacy gains.
- Children's social skills were assessed through questionnaires[3] completed by their teachers and parents. Modest increases in social skills were observed for both at-risk children and children with disabilities.

Child Outcomes and Program Implementation

Several program factors associated with positive child outcomes were identified. The pivotal roles of communication and collaboration emerged as a consistent finding across all sites as did two issues related to curriculum.

- The degree of collaboration and communication among classroom teachers, teaching assistants, and special educators affects teacher-child interactions and ultimately, the quality of day-to-day activities.
- Open communication that consistently centers on implementing appropriate learning experiences affects relationships with parents.
- The ability to work effectively on a team is especially crucial in working with children with challenging behaviors.
- Although diversity is addressed in written descriptions of curriculum, variability was found in the degree to which teachers and assistants understood and valued a range of differing socio-economic, racial, and religious backgrounds.

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[1] *Newborg, J., R. & Wnek, L. (1988). Battelle Developmental Inventory. New York: The Riverside Publishing Company.*
[2] *For more information, contact May Louise Hemmeter at (606) 257-7905 or MLHEMM@pop.uky.edu.*
[3] *Gresham, F. M., & Elliott, S. N. (1990). Social Skills Rating System: Social Skills Questionnaire. Circle Pines, MN: American Guidance Service.*

- Both child-centered and teacher-centered activities were found in classrooms. There was not a clear pattern as to which emphasis resulted in more child engagement and ultimately, more learning.

Recommendations

- Provide on-going support (rather than one-time workshops) to classroom personnel related to developing effective communication and collaboration skills. In particular, a mechanism is needed to support effective collaboration between teachers and their assistants. Support for developing links and facilitating collaboration with other programs that provide services to families are also needed.
- Data from this study confirmed findings from previous years that teachers need support related to the extent to which they embed diversity issues into the classroom. Program and individual teacher evaluation procedures need to emphasize classroom climate. Teachers and staff who are not valuing diversity need specific support in recognizing the impact of their attitudes and changing their interactions.
- Professional development activities should focus on training and information related to maximizing the effectiveness of home visits. This training should focus on using home visits to accomplish a variety of purposes especially supporting parents in facilitating their children's development at home.

University of Kentucky
Kentucky Preschool Evaluation Project
46 Dickey Hall
Lexington, KY 40506-0017
Phone: (606) 257-4331
1-(800) 257-9602
Fax: (606) 323-9799

Longitudinal Findings of the Kentucky Preschool Evaluation Project

Preschool participants, at least through the beginning of middle school, continue to do as well as or better than their peers who were not eligible for the programs when they were in preschool. Given the KPP's goal of giving at-risk children a head start, these findings are particularly encouraging.

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Introduction

An ongoing goal of the Kentucky Preschool Evaluation Project is to measure the long term effects of participation in the Kentucky Preschool Program (KPP). Three studies were implemented to examine the longitudinal effects of the preschool program: a) survey data on children in the 2nd and 4th years of primary and in the 5th grade; b) survey and interview data on two groups of children in the 4th year of primary; and c) middle school students' surveys.

The findings from the first study are similar to findings that have been reported for the last several years of the Kentucky Preschool Evaluation Project. These findings indicate that when there are differences between groups (e.g., teacher expectations for high school completion), the differences favor the preschool participants over their peers.

The second study reveals two important findings. First, children who are further behind at the beginning of preschool make more progress during preschool than their peers who are doing better at the beginning of preschool. Thus, at the end of preschool, these two groups of students look quite similar. The second finding is that, regardless of the magnitude of their progress during preschool, preschool participants continue to do as well as their peers who were not eligible for the preschool program.

The third set of data, the middle school surveys, are similar to the ongoing longitudinal data which indicate that the children who attended the preschool program continue to do as well as and in some cases, better than, a random group of their peers.

Taken in combination, the longitudinal data suggest that the progress children make during preschool is dependent on their status as they enter preschool. In

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addition, it appears that the progress they make during preschool is sufficient for providing them with a foundation that supports them as they move through the primary grades. Preschool participants, at least through the beginning of middle school, continue to do as well as or better than their peers who were not eligible for the programs when they were in preschool.

These findings suggest that across levels (e. g., 2nd year of primary to 5th grade), parents and teachers have similar expectations for former KPP participants and students not eligible for the KPP program. Students in the two groups also have similar expectations for themselves. Given the KPP's goal of giving at-risk children a head start, these findings are particularly encouraging.

Study 1

Teacher and Parent Surveys of Students in the 2nd and 4th Year of the Primary Program and in the Fifth Grade.

In order to determine if there are differences between former KPP participants and non-participants as they move through primary levels, surveys were mailed to teachers of students in the 2nd and 4th year of primary and the 5th grade. These surveys measured the academic and social progress of the students. Two surveys were used:

a. Teachers were asked to rate children's social skills, academic motivation, and problem behaviors[1];

b. Teachers were asked to rate students' progress related to the Kentucky Educational Reform Act (KERA) learning goals[2].

Two groups of students were included in this study: a) participants – children who had attended the Kentucky Preschool Program, and b) comparisons – a random sample of all children (not only at-risk children) from the same classrooms.

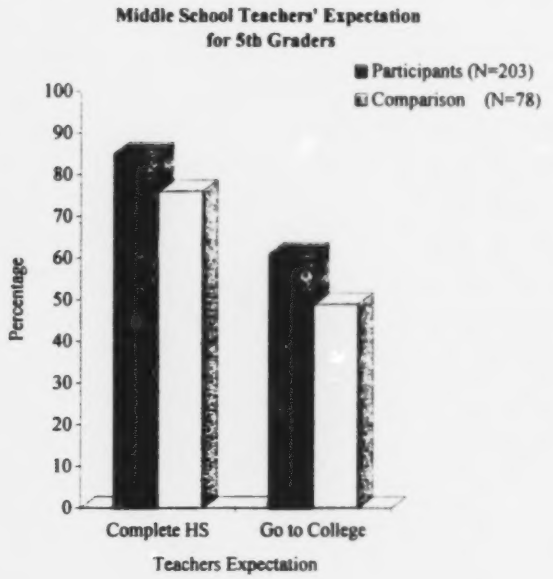
Study 1 Major Findings

- No significant differences were found between the participants and the comparison students (i. e., random sample of all children) on teacher ratings of social skills, academic motivation, or progress toward KERA's learning goals.
- Teachers rated communication and math skills high for both groups of students. Writing was scored lowest for both groups.
- Primary and elementary teachers expected participants to have the same chance of moving to the next grade and completing high school as most students in their class.
- Middle school teachers had higher expectations for participants than for comparison students for completion of high school, entrance into college, post secondary training, and transfer to a job. Specifically, middle school teachers expected 85% of participant students to complete high school compared to 76% of comparison students. They expected 61% of participant students to go to college compared to 49% of comparison students.

[1] *Social Skills Rating System-Teacher Form (SSRS) (Gresham & Elliott, 1990). This 40-item questionnaire evaluates children's social skills, academic motivation, and problem behaviors. Teachers were asked to report how often children demonstrated behaviors (for example, "Follows Directions") and how important those skills were for success in the classroom.*

[2] *Primary/Middle School Teacher Survey. This 18-item survey was designed to assess students' progress related to the goals of the Kentucky Education Reform Act, the primary curriculum, and expectations for future success. Teachers of fifth grade students completed one version (Middle School Teacher Survey), while teachers of students in the 2nd and 4th years of primary completed a different version (Primary Teacher Survey). In addition, teachers reported information on referrals for Extended School Services, Chapter 1, Family Resource/Youth Service, and Special Education as well as numbers of children currently receiving these services.*

- Participants had higher grades in Language Arts, Mathematics, Social Studies, and Science than did comparison students during the most recent report period.
- Significantly more comparison students than participants were referred to Family Resource/Youth Services Centers. No differences were found concerning referrals for any of the four services for students in the 2nd and 4th year of the primary program.
- Finally, there were no differences regarding attendance between comparison and participant students.



Study 2
An In-Depth Analysis of Former Preschool Participants in 4th Year of Primary.

This study was designed to answer the question "What are the differential effects of the KPP on the most and least prepared students." In order to look at the impact of the Preschool Program in greater depth, a small sample of children who were finishing the primary program was selected. These children were selected from among the children who had been tested by the project when they were in the Kentucky Preschool Program (1993-1994). Nine children who made the smallest gains during the preschool year comprised Group 1. Group 2 consisted of ten children who made the greatest gains during the preschool year. Classroom teachers of these 19 children were interviewed to better understand the their progress.

Study 2 Major Findings

The findings, based on interviews with their teachers at the end of the primary program and developmental assessments, are as follows:

- The children who made the greatest gains during preschool were significantly more behind when they started preschool than the children who made the smallest gains. Because Group 2 made greater gains during preschool, there were only minimal differences between the two groups at the end of preschool. This finding is critical to understanding the following results.
- In third grade, children who had made the greatest gains in preschool had stronger math/problem-solving skills than skills in other areas, while Group 1 children's strengths were evenly dispersed across all areas.
- In third grade, both groups of children were performing as well as or better than their peers in overall school performance.
- Over half of the teachers of both groups reported that children got along with their peers better than did other children in the class.

- There were no differences between the two groups on ratings of social skills, problem behaviors, or academic motivation.
- Overall the data suggest that children's progress during preschool was dependent on their developmental status when they entered preschool. Children who were more behind at the beginning of preschool made more progress than did children who were less behind. Regardless of their development at the beginning of the Preschool Program, the progress they made in preschool adequately supported their success through the 4th year of primary.

Study 3

Questionnaire Completed by Former Preschool Participants and Their Peers Currently in the Fifth Grade.

Study One and Two, and previous Kentucky Preschool Evaluation Project reports, have documented the head start given to at-risk preschoolers by the Kentucky Preschool Program. The third study might be summarized around the question "How will former KPP participants compared to non-participants report self-expectations, hopes, and progress?" It was designed to assess if the experience of KPP "inoculated" at-risk children for subsequent primary and middle school problems. More specifically, this study was designed to appraise the resiliency of at-risk students who were former preschool participants. A number of nonacademic measures were examined using a questionnaire that was completed by fifth grade students. In addition to academic outcomes, several areas that affect how students do in school were evaluated. This questionnaire addressed such areas of early adolescent social competence as how students feel about themselves, how much support they get from their families, their expectations for future success, how students feel about school, and their relationship with their families.

About 36% (N=117) of middle school students completed and returned the survey. There were no family demographic differences between the preschool program participants and their peers. For example, over two thirds of the mothers in both groups had completed at least high school, while similar percentages of fathers in both groups had completed at least high school (e.g., 66% of comparison fathers and 63% of program fathers).

Study 3 Major Findings

The findings indicate that there were few differences between the two groups of students. When there were differences they favored the participants:

- High percentages of students (91% of participants and 94% of comparison students) reported positive self-perceptions.
- Students from both groups reported high expectations for their education: 76% planned to either attend or complete college (83% of participants and 77% of comparison students).
- More students in the comparison group (78%) planned to have full time jobs or be a homemaker than in the participant group (68%). About 20% of participants intended to work part-time compared to 12% of comparison students.
- Both groups (86% of participants and 76% of comparison students) reported positive attitudes toward school. A high percentage of students (95% of participants and 98% of comparison students) reported completing their homework.

- About 70% of students reported being involved in extracurricular activities (68% of participants and 71% of comparison students).
- Approximately half of the students reported that their parents checked their homework regularly (46% of participants and 59% of comparison students).
- Students reported stronger relationships with their mothers: 95% of students from each group stated that their mothers let them know how much they were loved while 78% applied this to their fathers (76% of participants and 84% of comparison students).

Recommendation

- Preschool participants who begin the program the furthest behind appear to make the most progress. This positive finding needs to be shared with preschool teachers. Often these children provide the most difficult challenges for teachers. Teachers need to know that their efforts are making a positive difference for these young children. It may also be helpful for teachers to be aware of specific strategies and practices that are effective for children who are the furthest behind.
- Findings indicate that preschool participants perform as well as or better than comparison children in the early primary grades with the exception of writing. Current best practice in early literacy emphasizes the importance of implementing appropriate writing experiences. In particular, preschool and kindergarten teachers need to model meaningful writing activities for individual children. For example, children should be encouraged to talk about their artwork and select several key descriptors. Teachers then write these words on the child's artwork as they watch.
- Findings indicate that positive effects of participation in the preschool program persist at least until the 5th grade. However, additional factors (related to both home and school) also affect children's progress. Additional information is needed concerning these factors. For example, is there a relationship between parents' and teachers' verbal interactions and children's progress? What kind of talking (for example, direct/authoritarian or conversational or a combination) is associated with student performance and/or self-concept?

Mary Louise Hemmeter
Kim Townley
Stephan Wilson
Ann Epstein
Huyi Hines
University of Kentucky
Kentucky Preschool Evaluation Project
46 Dickey Hall
Lexington, KY 40506-0017
Phone: (606) 257-4331
1-(800) 257-9602
Fax: (606) 323-9799

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Cumulative Findings of the Kentucky Preschool Evaluation Project

"These findings indicate that the Kentucky Preschool Program has a positive effect on children's development during preschool, their readiness for kindergarten, and their social and academic progress through the fifth grade."

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Introduction

Since 1991, the Kentucky Preschool Evaluation Project has followed the academic and social progress of 3528 students. Several assessment procedures have been used to track the progress of Kentucky Preschool Program participants and their peers through the fifth grade. Developmental assessments were administered to four year-olds who were at-risk and to three and four year-olds with identified disabilities while they were in the Kentucky Preschool Program. Over 2550 elementary and middle school teachers from 496 schools in 142 districts completed social skills rating scales, transition (from preschool to kindergarten) questionnaires, and academic surveys to track children's progress as they moved through the primary program.

The results will be summarized across three areas: academic, social, and transition. For the purposes of this report, academic learning at the preschool level included cognitive (e.g., identifies objects, answers simple logic questions), motor (e.g., copies triangle, hops on one foot for 10 feet), and communication (e.g., understands regular plural forms, uses five or six word sentences) skills as well as early literacy skills (e.g., letter recognition, book handling knowledge). Academic learning at the elementary level included achievement in subject areas (e.g., math, science), performance toward the KERA learning goals, and overall academic motivation. Children's transition from preschool into Kindergarten was addressed by assessing language/communication abilities as well as children's overall preparation for learning in school settings. Transition across grade levels was addressed by studying teachers' expectations for students' future success.

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Progress During Preschool

At-Risk Children

Children's academic skills[1,2] were assessed during the 1993-1994, 1994-1995, 1995-1996 and 1997-1998 school years. At entry into the Kentucky Preschool Program (KPP), most children demonstrated delays. After five months in the program, children demonstrated the following improvements.

- Seventy-six percent of the children could recognize either all or part of their name, compared with 60% in the fall.
- Thirty-eight percent of children could write either all or part of their name, compared with 24% in the fall.
- The average numbers of letters the children recognized increased from 7 in the fall to 16 in the spring.
- Children significantly increased their understanding of books. They developed an understanding of the purpose of books, including the beginning and ending of stories and where to find titles.

Development was also assessed through measurement of fine and gross motor skills (e.g., cutting with scissors, skipping), receptive and expressive communication (e.g., understanding simple negations, appropriate use of *ed*), and cognition (e.g., sorting forms by shape, answering simple logic questions). Key findings are listed below.

- Children made gains in all areas except expressive communication.
- Children made the most significant gains in the area of gross motor development.
- At the beginning of the program, the most significant delay was in the area of receptive communication. However, the children made significant progress in this area over the year they were in preschool.
- Following approximately five months of participation in the KPP, children's social skills improved in each of the following areas: adult interaction, expression of feelings, peer interaction, coping, attention, and dressing. At the end of preschool, children demonstrated particular strengths in coping, peer interactions, and eating independently.

Children with Disabilities

Of the 328 preschoolers with disabilities, 58% (N=190) had speech delays, 38% (N=124) were developmentally delayed, and 4% (N=12) had severe disabilities. The key findings for these children are as follows:

- Following five months in the KPP, children demonstrated progress in each area (e.g., cognitive, motor).
- Children's self-concepts were strengthened.
- Children made progress in the following: showing affection toward people, enjoying playing with other children, expressing affection for their peers, comforting peers in distress, washing and drying hands without assistance, and taking care of one's own toileting needs. Expression of feelings and toileting were the children's weakest areas even though they made progress in these areas.

[1] *Newborg, J., Stock, J. R., Wnek, L. (1988). Battelle Developmental Inventory. New York: The Riverside Publishing Company.*

[2] *Clay, M. M., (1992). Letter Identification and Concepts about Print Test in The Early Detection of Reading Difficulties (3rd Ed.) New Zealand: Heinemann.*

Children with disabilities also made significant gains in the development of early literacy skills. At the beginning of preschool over half (55%) could not recognize their name[2] and almost all (95%) of the children were unable to write their name.

- At the end of preschool, 62% were able to recognize either part or all of their name compared with 45% in the fall.
- Nineteen percent were able to write part or all of their name at the end of the program compared with 6% in the fall.
- They made significant improvements in letter recognition and writing, and knowledge of books.

Transition into Kindergarten

Teachers completed questionnaires[3] that addressed children's readiness for Kindergarten. Kindergartners who had participated in the Kentucky Preschool Program demonstrated especially strong skills in the following areas: being at ease in school environments, making friends, participating in child-selected activities, creative play, cooperative play, and joining in activities.

Three groups of children were rated by their teachers: Kentucky Preschool participants, children who were eligible for the program but who did not participate, and children who were not eligible (i.e., due to higher family incomes). Children who were eligible for the KPP but who did not participate were rated lowest among the three groups. In all areas, participants were rated significantly higher than children who were eligible but who did not participate. There were few differences in readiness skills between participants and children who were not eligible. This is a particularly strong finding in that it indicates that at entry into Kindergarten there is not a significant gap between KPP participants and children from higher income families.

Expectations for Future Success

In order to look at transition beyond preschool, K-5 teachers were asked to rate their expectations for children's future success[4] including progressing to the next grade level, completing high school and transitioning to college. Overall, teachers rated KPP participants as having the same chances of progressing to the next grade level and completing high school as their peers.

Progress During Primary

Academic Competence

Teachers rated the academic competence[4] of preschool participants and their peers during their four years in the primary program and the fifth grade. Students who participated in the preschool program were compared to their peers who had not participated in the preschool program on measures of overall academic performance and motivation. Key findings regarding the progress of elementary children are as follows:

- Teachers rated participants and their peers similarly through fourth grade. This suggests that children from low income families who participated in the preschool programs continue, at least through the fourth grade, to do as well as their peers from higher income

[3] *Peisner, E. S., Bryant, D. M., Clifford, R. M. (1988). Questionnaire for Elementary School Teachers (adaptation). University of North Carolina at Chapel Hill.*
[4] *Primary/Elementary Teacher Survey.*

families;

- Teachers rated preschool participants significantly higher than their peers at the fifth grade. Teachers viewed fifth grade children who had participated in the KPP as more motivated and more successful in areas of academic performance than children who were not eligible for the preschool program.

Teachers also rated participants' progress regarding KERA learning goals (e.g., applying core concepts, principles) and curriculum areas (e.g., reading, science, art). The key findings are as follows:

- Teachers reported that participants did as well as their classmates at each level from the first year of primary through the fourth grade.
- While preschool participants were rated as doing as well as their peers in most areas, they were rated significantly lower than their peers at the kindergarten level in writing and problem-solving. However, these differences were not observed beyond their kindergarten year.

Social development

Teachers were also asked to rate students' social skills and problem behaviors[5]. Social skills included such things as inviting others to join in activities, using time appropriately while waiting for help, compromising in conflict situations, and accepting peers' ideas for group activities. Problem behaviors included getting angry easily, appearing lonely, disturbing ongoing activities, and acting sad or depressed. Teachers reported the following:

- Preschool participants had slightly weaker social skills and slightly more problem behaviors during the primary program (i.e., Kindergarten through third grade) than their peers. However, by the fourth and fifth grades, participants had better social skills and fewer problem behaviors than did their peers;
- Teachers reported that former preschool participants performed as well as their peers in two key social areas: self-sufficiency and being a responsible group member.

Summary

These findings indicate that the KPP has a positive effect on children's development during preschool, their readiness for kindergarten, and their social and academic progress through the fifth grade. These findings can be summarized into three major areas:

1. Children make significant progress across all areas (e.g., social, motor, cognition) when they are in the preschool program;
2. Children who attend the preschool programs are rated by their teachers as being as ready for kindergarten as their peers from higher income families;
3. Children continue to do as well in both social and academic skills as their peers through the fifth grade.

In summary, these findings suggest that the Kentucky Preschool Programs is successfully "closing the gap" between children from high and low income families.

[5] *Gresham, F. M. & S. N. (1990). Social Skills Rating System: Social Skills Questionnaire. Circle Pines, MN: American guidance Service.*